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TOWARDS THE FORMALIZATION OF
STRATEGIC PLANNING — A CONCEPTUAL APPROACH

by

ARNOLDO C. HAX and NICOLAS S. MAJLUF

Technical Report No. 2

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Alfred P. Sloan School of Management
Massachusetts Institute of Technology
Cambridge, Massachusetts 02139

August 1977

FOREWORD

The Alfred P. Sloan School of Management at the Massachusetts Institute
of Technology uniquely combines management programs for undergraduate,
graduate, and executive development education and research. The work of
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William F. Pounds
Dean

ABSTRACT

This paper attempts to present a general framework for the strategic
planning process in complex organizations, with special emphasis in
diversified business corporations. It has to be recognized that a specific
strategic plan has to be designed to fit the particular conditions of the
corresponding situational setting. Consequently, it is not intended in
this paper to push the general validity of this framework, but to make
available a set of concepts, steps, and variables that may suggest creative
strategic options, and could provide an orderly strategic planning process
in a business firm.

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Abstract. This paper attempts to present a general framework for the strategic planning process in complex organizations, with special emphasis in diversified business corporations. It has to be recognized that a specific strategic plan has to be designed to fit the particular conditions of the corresponding situational setting. Consequently, it is not intended in this paper to push the general validity of this framework, but to make available a set of concepts, steps, and variables that may suggest creative strategic options, and could provide an orderly strategic planning process in a business firm.

1. *Introduction*

Large organizations play a central role in the structure of modern society. They are purposive associations of people that, by satisfying their own needs, develop an activity that also allow the satisfaction of other people's needs (Lawrence and Lorsh [24]).

In the activities of an organization, the internal and external world are interwoven:

- The internal world, which properly constitutes the organization, is a "formal association of people that has been established to achieve certain goals and that has a hierarchy and a set of rules that allow them to act in a coordinated way" (Silverman [37]).

- The external world or environment, which has grown in complexity and importance in the present society, has gained increased awareness of its ability to influence and constrain the organization's activities and to narrow its margin for independent decisions.

The strategic planning process is imbedded in the interaction between the organization and its environment. It is aimed at maintaining a viable match between them, by elucidating the important components in the organization-environment interrelationship. The final purpose of the strategic planning effort is to generate a feasible set of options

in order to take advantage of potentially favorable situations (or deac-
tivate potentially explosive ones), and to select from that set the course
of action that seems to be the most convenient for the organization.

The complexity of the interaction between the organization and its
environment, and the impact it has in preserving the organization's viability,
emphasize the convenience of undertaking the realization of strategic
planning activities.

Strategic planning is a capability developed by an organization to cope
with the ever changing forms adopted by its specific environment. The
organization tries to understand the signals coming from the environment
and to project their impact on its normal activities. This planning process
has to be lived by the overall organization, in order to adapt its internal
structure and set of programs to the new state prevailing in the environ-
ment, and to maintain a degree of alertness to deal with future changes.
It is a continuous search on the actual background of competence and
resources internal to the organization, to better fit the environmental
conditions in that moment.

The strategic planning process may affect in an important way the
internal balance of human interactions in the organization. Therefore,
this process has to be lived by all people, they have to commit themselves
to it, to reconcile their personal beliefs, to integrate them under a
common purpose. As Vancil [40] points out: "Dozens, literally hundreds
of two person agreements must be negotiated, many of them almost simul-
taneously".

This rather broad description of strategic planning is not an impe-
diment to identify most of the components that a conceptual model should
contain. Those basic components and their interrelations are depicted
in Figure 1.
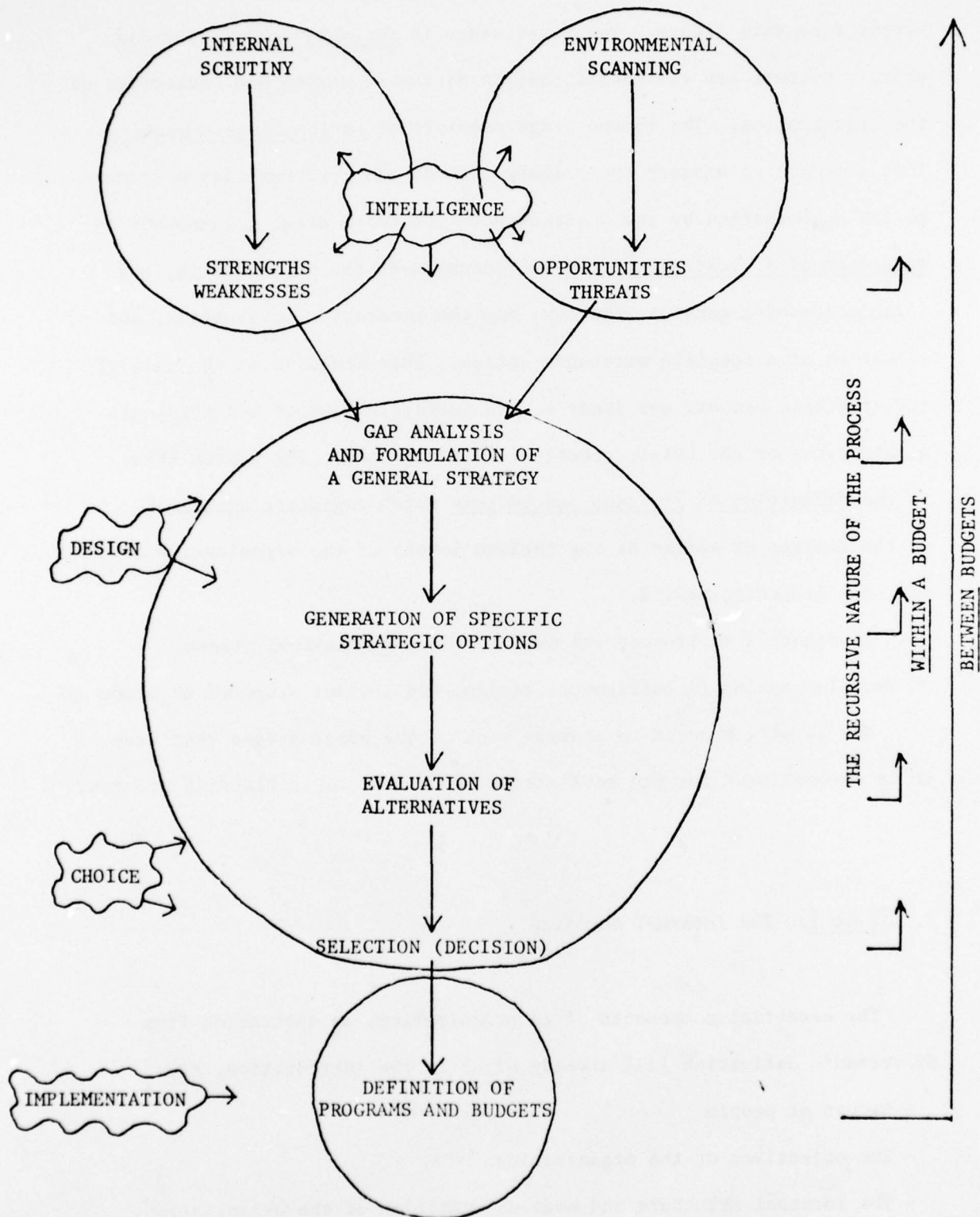
FIGURE 1. A CONCEPTUAL MODEL FOR STRATEGIC PLANNING

There are four major stages of the strategic planning process that
emerge from this figure. The first stage is internal scrutiny, whose
primary outputs are the identification of the strengths and weaknesses of
the organization. The second stage consists of environmental scanning
that attempts to uncover the primary threats and opportunities presented
to the organization by the environment. The third stage corresponds to
selection of a strategic option and encompasses the gap analysis, the
formulation of a general strategy, and the generation, evaluation, and
selection of a specific strategic option. This stage is at the core of
the strategic process and leads to the identification of new strategic
alternatives or the reinforcement of existing ones. The fourth stage
is the definition of programs and budgets which registers agreement
on the courses of action at the various levels of the organization for
the next budgeting period.

In Figure 1 references are made to the now classical stages
of decision making (intelligence, design, and choice) proposed by Simon [38].

Now we will proceed to analyze each of the basic stages that have
to be accomplished for the realization of the strategic planning process.

2. *Stage 1: The Internal Scrutiny*

The essential components of an organization, as abstracted from
Silverman's definition [37] already given in the introduction, are:

- Groups of people

- The objectives of the organization

- The internal structure and mode of operation of the organization.

2.1 *Groups of people in the organization*

It is essental to recognize from the outset the profound social, psychological, and political ramifications derived from the implementation of a strategic change in an organization. The mere decision of initiating a formal planning process in an organization is liable to generate a chain of convulsionary reactions, as reflected by Ansoff [4] when expressing:

> Typically, the introduction of a firm-wide planning effort is a traumatic and turbulent experience. It does require focus of top management attention; it does take three to five years to arrive at a satisfactory planning process. The process is accompanied with latent, if not overt, organizational resistance. If top management support lapses too soon, then planning is either rejected or becomes an annual exercise in managerial frustration.

It can be specially valuable for the success of a strategic change to acknowledge that the organization is a meeting place for groups with different needs, objectives, and strengths, that interact in many different ways.

Allison [3] recognizes the role of individuals within an organization when he describes the Bureaucratic (or Governmental Politics) model of decision making. This model sees no unitary actor (as in the Rational Actor model) but rather many actors and players. Moreover, these actors are not a monolithic group focusing on a single strategic issue (as in the Organizational Process model) but on many diverse issues. Thus, members of the organization can be perceived as individuals who act in terms of no consistent set of strategic objectives but rather according to various concepts or organizational and personal goals. They make corporate decisions not by a single, rational choice, but by the pulling and hauling that is politics.

The correct assessment of people's capabilities, needs, attitudes, values, motivation, behaviour, pattern of interaction, working drive, posture with regard to the organization's objectives, etc., impinge

in a decisive way on the quality and level of participation, and on the emotional ties and compromises with the agreed strategic plan. Establishing conditions that assure a high degree of congruence among individual and corporate objectives is one of the most challening and demanding tasks of any planning and control system.

The proper identification of the managerial style that better fits with the implementation of a strategic decision, and the selection of a person whose leadership characteristics correspond with that style, is another important variable which, if not adquately considered, may threaten the success of a strategic plan.

The appropriate managerial style, as well as the nature and content of the planning system, change as the organization grows. An excellent summary of the essential characteristics of a managerial process by stage of industrial maturity (embryonic, growth, mature, and aging) has been prepared by Arthur D. Little, Inc. and is given in Appendix I.

These brief statements on the people, and their association and interactions, are intended only to highlight the importance the human side of the planning process may have on the successful realization and implementation of a planning experience.

2.2 *The objectives of the organization*

The objectives of an organization should reflect the expectations of a variety of external and internal groups. The society, local community, stockholders, customers, suppliers, and creditors represent the major groups of outside interests; while top and middle managers, hourly workers, and staff constitute the dominant inside interests (Steiner and Miner [39]).

In profit making corporations, the top management group usually has the control of the firm, and is responsible for formulating a balanced set of objectives. For public services, the objective setting process is much more complex because the measures of performance of the organization are harder to define, are multiple in number, and often conflictive in nature. Moreover, there is no single controlling group, and those groups represented in the organization (managers, professional staff, other employees, government, and general public) may have contradictory interests with regard to the way it should be managed.

In general, the aspirations of all groups associated with an organization should be represented in its objectives. But there is an essential difference in the character and emphasis of this representation depending on the group that is actually leading the organization. This leading group could impose its objectives to the organization, but it should qualify them according to the purposes of other groups (and to the perceived strengths of those groups).

A final consideration about the identification of the objectives in an organization is to look at what the organization does, and not to what it is intending to do. The written statements of objectives in the enactment of a public service or in the president's annual report in a private corporation are often too general or too far away from reality. In order to identify the character of an organization, the implicit objectives which are guiding its operation should be recognized. Unfortunately, these objectives may be many, change with time, and sometimes non-explicit even at senior levels. Nonetheless, they are molded in the activities of the organization, and all effort spent in gaining a better understanding and clearer statement of objectives is surely worthwhile.

At this stage we are concerned primarily with the broad definition

of the overall organizational objectives as they are normally encountered in the policy statement of the firm. These broad objectives represent general guidelines for the planning process.

In a subsequent stage, when specific strategic options have to be selected and defined in terms of programs, there is a need to establish much more precise objectives affecting all the hierarchical levels involved in the execution of that program. Moreover, quantifiable measures of performance have to be developed to allow for the proper tracking and control of the plan being formulated. This issue is going to be addressed in the fourth stage of our conceptual model.

2.3 *The internal structure and mode of operation*

An organization may be seen as a well ordered aggregation of units in a hierarchical network. The definition of a unit is arbitary. It may be as small as an individual or as large as the whole organization. The criterion to be used in the selection of these units is purely operational depending on the degree of detail chosen to represent the internal environment of the organization and the application that is going to be made with that representation. Each one of these units, in turn, can be viewed as a smaller organization.

The following issues will be addressed in discussing the organizational structure and its mode of operation:

- The hierarchical structure

- The rules of operation

- The dimensions underlying the activities of a unit

- The communication network.

The hierarchical structure that supports the units of the organization

is pictured normally by means of the organization chart, which shows the different hierarchical levels and the accountability lines. The most common ways to set up these charts is by functions or by products or programs. This leads to the two basic forms of organizational design: functional organization and product division organization. Sometimes both criteria are used in what is known as matrix organizations, but this extension leaves accountability more ambiguous, and it needs to be specially indicated (Galbraith [16], Goggin [17]).

An empirical study conducted by Rumelt [34], covering the years 1949 to 1969, for more than two hundred companies drawn from the Fortune 500, shows that the proportion of product division organization forms are increasing significantly and they seem to perform better than functional organizations. The author argues that product division organizations are a natural trend for a firm when it increases in size and diversification.

This step from functional to product division organizations generates a new level of general management, and the whole process of change may be a traumatic experience at the moment of implementation.

The organization structure goes far beyond the representation provided by the organization chart. It is the framework for the organization to operate, and for the full range of transactions among people to be made. Formal and informal information channels are the network of this structure. They define the communication patterns in the organization, that result in a hidden organization hierarchy, representing the real levels of influence which might be markedly different from the ones shown in the organization chart. Stafford Beer [9] has proposed a five level recursive model that could be useful in uncovering that hidden organizational hierarchy.

With regard to the rules of the operation, the ones governing account-

ability have been mentioned as imbedded in the organization chart. But there are many other rules represented by the procedures, habits, and regulations the organization uses to handle specific situations (Allison [3], Simon [38]). Sometimes these rules are enunciated explicitly, but often they are just the experience accrued in the organization and are implicit in the activities that are set in motion in a more or less routine way. The rules will change with time as long as old and new situations being faced by the organization allow it to keep on learning and improving the existing procedures.

From the point of view of the full organization, the main dimensions underlying the activities of a unit are the following:

- The degree of interaction, that measures the intensity by which the activity of a given unit affects other units in the organization. An activity is considered to be autonomous if it generates no appreciable interaction. Some activities that are autonomous under normal operation may become interactive if some anomaly is presented.
- The degree of centralization for activities in the same hierarchical line.
- The degree of coordination for activities in different hierarchical lines.

Coordination and centralization are greatly influenced by the size of the organization, geographic location of units, and the existence of some entities in the structure of the organization whose specific role is that of coordination of activities, as is the case with some managerial committees.

All these interactions among units reverberate along the communication network of the organization in the form of information flows that may go

through formal or informal channels:

- Formal channels are well defined in the organization structure and go basically along and across hierarchical lines (vertical and horizontal communication patterns).

- Informal channels are not defined and they appear and disappear as a direct function of people's interactions (external personal contacts, human sources of information, informal relations between people). It is important to keep in mind their presence, because they have proven to be more significant and faster than formal channels (Aguilar [2]).

Not all information generated inside a unit is valuable from the organizational perspective (Ackoff [1], Argyris [7]). This observation impacts directly in the specification of some characteristics that the information system has to have:

1. It has to filter information which is considered not valuable for the management of the overall organization. Operational information does not need to be reported unless an exceptional situation arises.

2. If the limited human capability to process, absorb, and relate numerical information is taken into consideration, it may be added that the filter function is not only one of refinement of the information, but also one of condensation. Some key internal variables need to be defined to summarize the state and trend of the organization activities.

3. One step beyond the mere summarization of all data in a set of numbers is to present all the information in a way which has intuitive meaning for the manager; that is to say, in a way in which information may be easily internalized by just looking at it. This point is nicely made in Beer's book [9]:

... The fact is that the human brain is singularly incompetent in the matter of handling figures.

Consider the following situation. You are trying to judge whether a piece of furniture will fit into a particular alcove. Try to estimate the length of this sideboard in feet and inches; try to estimate the width of the alcove in feet and inches. The likelihood is that you will be anything up to 20 per cent out in each estimate, and therefore your 'calculation' as to the possibility of fitting the furniture in will be nonsense. No; the best thing you can do is to 'guess' whether the piece will fit or not. Except in the most critical cases you are likely to be right. More dramatically still, as a second example, think of yourself successfully dodging across a major traffic flow in the heart of London. Then contemplate your chances of survival if you are attempting to calculate the maneuver in terms of distances and relative speeds...

In short, everything we know is psychology about perception, pattern recognition, and (in general) awareness of the state of of affairs, says that we should try to reach our judgements in terms of relative size and shape, relative color, relative movement. When we draw graphs and histograms we pay attention to the first of these disiderata - but even then, having reached the judgement as a matter of fact, we hasten to make it look 'respectable' by quoting rows of digits.

4. A desirable component coupled to (or included as part of) the formal information system, is a testing device for managers to assess beforehand the way in which certain decisions may impact the functioning of the organization. Simulation models are partly playing this role, but they are also providing a mechanism to learn about the organization (both during the design stage and under normal running mode), by uncovering the manner in which units interact and the effect that this interaction may have in the output of the organization.

5. Given the convenience of having an intuitive grasp of a situation coupled with the capability to foresee the impact of a decision, some authors have forecasted a symbiosis of man-machine as a way to complement human potentialities. This would enhance the possibilities of including in the analysis of a problem subjective information and complex value trade-offs that are not easily handled by present techniques.

In this way, the internal world of an organization has been explored and described in general terms. The main components of this description are summarized in Figure 2.

In order to continue the analysis of the interaction between the organization and its environment, the next section will comment on the environmental scanning, which, when joined with internal scrutiny, will open the possibility to undertake the study of the organization-environment gap.

3. *Stage 2: The Environmental Scanning*

This section develops a characterization of the external environment and of the kind of strategies that the organization may follow in dealing with it.

The importance of the environmental scanning stage cannot be under-emphasized. A negligence or miscalculation in this stage of the strategic planning process may lead to severe damages affecting the long term survivability of the organization, as has been lucidly described in Leavitt's famous "marketing myopia" article [25].

Additional pressures for a careful environmental scanning has been added in the last decade, due to the unprecedented economic and social changes acting upon the organization. Heller [20] has summarized these changes as follows:

- a menacing double-digit inflation curbed but not cured either by our first "peacetime" price-wage controls or by the highest unemployment rates in 35 years;
- the longest and deepest recession since the Great Depression of the 1930's;
- an energy crisis that caught us unaware and hence unprepared and remains unresolved;
- startling jumps in the relative prices of farm prices and energy, the end of an era of cheap food and oil;

The most distinctive elements in the description of an organization are:

- The groups of people

    - They constitute the human side of the organization
    - Their capabilities, needs, objectives, strengths, and resistance
      to change, if not properly incorporated in the planning process,
      will threaten the successful realization and implementation of
      the strategic plan

- The objectives

    - The objectives of the organization are indeed the objectives of
      certain groups associated with it.
    - The aspirations of all groups are represented in different degrees
      in the objectives of the organization.
    - These objectives drive the functioning of the organization.
    - These important objectives are the ones implicit in the actions of
      the organization. They may not be the ones initially specified in
      the definition of the organization, may change with time, may not
      be explicitly enunciated, may not be well known.

- The internal structure and mode of operation

    - Units are defined
    - In a hierarchical structure
    - With rules of operation (explicit or implicit)
    - And different modes of operation, which may be analyzed in terms of:
        - The degree of interaction
          (autonomous vs. interactive activities)
        - The degree of centralization
          (in the same hierarchical line)
        - The degree of coordination
          (in different hierarchical lines).
    - These interactions among units reverberate along the communication
      network as:
        - Information flows
        - Along formal (vertical and horizontal) and informal channels
        - That, when are part of the formal information process of
          the organization, they are:
            - Filtered (Selected)
            - Condensed (summarized by means of key internal
              variables, in a state and a trend)
            - Reported (Preferably to allow an intuitive grasp)
            - Projected (Under different circumstances).
        - Informal channels:
            - Are not well defined
            - Appear and disappear as a direct function of people's
              interaction
            - They can be faster, more accurate, and more signifi-
              cant than formal channels.

FIGURE 2. THE INTERNAL SCRUTINY OF THE ORGANIZATION

. the highest interest rates and the biggest budget defi-
  cit in U.S. history;
. the near bankruptcy of one of the world's great cities;
. in the international economy the acceptance of the un-
  acceptable, namely, dollar devaluation, the dethroning
  of gold, and floating (though managed) exchange rates.

The basic parameters that have to be described are the ones governing
the change in the environment and its interaction with the organization.
These parameters are summarized in terms of:

- The form and speed of change in the environment;

- The underlying structure in the organization-environment interaction;

- Some additional comments on the kind of strategic options open to

  the organization.

3.1 *The form and speed of change in the environment*

The form in which the environment changes may be viewed somewhere
between fully predictable to fully unpredictable. That is to say, there
is an expected evolutionary component of change, and an unexpected and
unsystematic one.

For the organization to deal with these two very unequal forms of
change, it has to develop sensible different strategies. There are
two basic modes the organization might use to deal with environmental
changes. One is to maintain a degree of flexibility or adaptability to
adjust itself to the new conditions imposed by a change, including the
development of contigency actions depending upon the realization of various
predictable scenarios. The second mode is the ability of the organization
to negotiate with or exercise some control to the environment, in order
to avoid the damage resulting from a sudden, unpredictable change. This
second case requires the readiness of the organization to recognize
opportunities and threats in the environment and to influence on going

patterns in a way to preserve future viability (Cyert and March [14]).

The speed of change adds another component which may challenge the adaptation capability of the organization to cope with the pattern of change.

3.2 *The underlying structure in the organization-environment interaction*

An effort has been made to elucidate some typical structures in the interaction organization-environment. The correct identification of these structures will allow the understanding of the main forces driving the change in the organization and, consequently, will give an insight on the appropriate strategic courses of action under different scenarios.

We can suggest three basic forms of environment structures to be designated as competitive, regulated, and social environments.

In the competitive environment the survival game is one of finding new opportunities which have not already been exploited. Organizations are looking for a comfortable niche which may preserve their future viability from actions taken by competitors. This is the typical situation of a profit oriented firm in a competitive market, a situation which is neither perfect competition nor monopoly, but rather an oligopolistic middle ground. Economic theory does not provide a clear answer to explain the behavior of a firm in this environment. However industrial economics is helpful in suggesting descriptive measurements for the degree of competitiveness in the environment (Caves [12], and Scherer [35]). The main elements of market structure as indicated by Caves are:

- Seller concentration

- Product differentiation

- Barriers to entry of new firms

- Buyer concentration

- Height of fixed costs

- Growth rate of market demand.

An organization in a mainly competitive environment has to develop the capability to create and control its own environment (for example, through marketing activities). That is to say, to look for that secure niche mentioned above and try to hold it. The Boston Consulting Group's approach to strategic planning [10] tends to emphasize the importance of market leadership as a primary criteria for long term success. This approach is examined in detail in Hax and Majluf [19].

The second type of structure is the _regulated environment_. In this case, organizations are subject to one or many forms of regulatory actions; for example, regulation of prices, of quality, of the fairness of opportunities open to minorities, of foreign trades, etc. The most typical regulatory authority is the government, but there is an increasing number of different groups (professionals, workers, customers, foreign businesses and governments, etc.), which are having an impact in the organization's behavior. Survival in this setting is concentrated in the political relationship established with all these different regulatory bodies. That is to say, the organization has to develop negotiation capabilities to secure certain stability of regulatory rules and to avoid having these rules actually threatening future operations. For example, public utilities have obtained a fairly stable regulated environment (Myers [30]), while Universities may be suffering from excessive control (Lyman [29]).

Finally, the third structural form is the _social environment_, which is characterized by the difficulty of the organization to keep adjusting its operation to the changes in demands coming from it. Contrary to the case of competitive environment, in which organizations are strongly influencing their own environment, in this case organizations are being shaken by the forces in the environment, they are persistently falling

behind of what is expected from them. Under these circumstances, the effectiveness of the organization will deteriorate continuously and, usually, only a major external action can reestablish an adequate degree of fitness. A good example showing the difficulties to actually manage the situation in the health field is given in Curran [13].

Some of the reasons that may explain this state of affairs are: the speed of change in the environment, the sluggishness in the administrative process required to produce the change in the organization, the size of the organization, and the difficulty of achieving consistency among the different political positions. The most characteristic organization falling in this category is the governmental public service.

Given the unmanageable situation which an organization has to face under this form of environment, there is not much room for action. The main strategy is focused on removing the constraints that are paralyzing the organization's capabilities to adapt. But this is not always easy and may be even impractical. What may be done in this case is just to develop a capability to understand the environment, to learn about it, to decipher it. That is to say, to become aware of the expectations that people hold and the organization is not fulfilling, in the hope that this knowledge may trigger some corrective actions at a proper level.

These three environmental structures are not mutually exclusive. In a given organization they may coexist, thus adding to the complexity of the strategic planning process.

3.3 *Some additional comments on the kind of strategic options open to the organization*

The strategic planning process has to uncover, decipher, and transmit the signals being captured from the environment. The organization will

focus its attention in a selected set of key external variables as proxies for the description of the environment, including those variables which are likely to have the largest influence in the organization.

The unstructured characteristic of the strategic planning process makes the kind of information required to be heavily dependent on specific circumstances. When the environment has a large evolutionary component which may well be predicted within certain margins of error, more formal sources of information and methods may produce a great benefit. Under these conditions, strategic planning becomes a long range planning process, where events are projected for many years in the future and decisions made considering the impacts of those events.

If, on the contrary, the environment behaves in a very unsystematic way, overconstraining the organization's activities and making difficult the forecasting of even the near future, the organization will be "muddling through" its daily activities (a situation which is likely to happen under the social structure mentioned above). This method should be understood not as a panacea to manage organizations in this difficult environmental circumstances, but as a description of what organizations are doing to survive in this case. What many authors are actually predicting is that survivability in itself is a fantastic achievement given the circumstances (Lindblom [28]).

But considering a more intermediate situation in which the organization has a certain margin for action and a rather limited forecasting capability, the strategic planning process becomes the resultant of small successive decisions reinforcing each other. It is a process of continuous trade-offs between short term objectives, which are more modest but more tangible, versus long term objectives, which are both more ambitious and less likely to be achieved. Strategic planning becomes a road map for

the achievement of long term goals. The organization is tracing a path and building specialized resources trying to maintain many options open until a major commitment is done. But, probably, the convergence to this major decision is the resultant of many smaller decisions along time, all of them reinforcing a certain direction of change by progressively creating the appropriate intermediate conditions in the organization (Hofer [22]).

Figure 3 provides a summarized view of the ideas discussed around environmental scanning.

4. _Stage 3: Selection of a Strategic Option_

By presenting sequentially the internal scrutiny and the environmental scanning stages, some of the complexity and richness of the strategic planning process may have been disguised. This section attempts to give an additional insight by focusing on the interaction between the organization and the environment.

The selection of a strategic option is the process of molding the course of action suggested by the environmental scanning to the existing pool of resources and constraints faced by the organization. It is an externalization of the real capability shown by the organization to adapt its internal structure to its specific environment.

We will distinguish two major steps in this stage: the gap analysis and formulation of a general strategy; and the generation, evaluation, and selection of a specific strategic option.

4.1 _The Gap Analysis and Formulation of a General Strategy_

The organization's activities are influencing in many different forms

The environmental scanning is intended to produce two main results:

- The identification of the basic, environmental variables to be addressed by a strategic plan.
- A first insight on the kind of strategic option that the organization should follow.

The different characteristics used to represent the environment are:

- The form of change:
    - Expected, Evolutionary, Systematic, Predictable
    - Unexpected, Unsystematic, Unpredictable.
- The speed of change.
- The underlying structure in the organization-environment interaction:
    - Competitive
    - Regulated
    - Social.

This information about the environment, coming from formal and informal sources, is summarized by a set of key external variables. For the organization to deal with different forms of environmental change, it has to develop sensible different strategies:

- Adaptation to evolutionary change, which may be strained by the speed of change.
- Control of some dimension of change, and negotiation with the environment if unsystematic and unpredictable forms of change are manifested.
- Creation and control of niche in a mainly competitive environment.
- Negotiation of stable regulatory rules and smooth political relationship with the regulatory body in a mainly regulated environment.
- or:
    - Work on the constraints that prevent adaptation in a social environment, if that is possible;
    - Muddle through;
    - Decipher the environment and learn of expectations about the organization's activities to incentivate some corrective action at a proper level;
    - Smooth the impact that externally generated adjustments may have on the organization (Government intervention in public organizations, take over in private firms).

The strategy of the organization is indeed:

- A succession of decisions reinforcing each other.
- A continuous trade-off between long-range objectives and short-range goals.

FIGURE 3: THE ENVIRONMENTAL SCANNING

the internal and external groups associated with it. Both groups are
building expectations about each other and setting rules to fix the pattern
of their relationship. The interaction and mutual constraining between the
organization and the environment are dependent upon their transactional
strengths.

The activities of the organization and the environment are manifested
through two basic forms of interventions:

- The intervention of the organization over the environment, which
  corresponds to the already cited mechanisms of controlling, creating,
  and negotiating with the environment. That is to say, mechanisms
  for building expectations according to the organization objectives and
  capabilities, and for assuring future survivability in case of excessive
  strain.

- The intervention of the environment over the organization, which may
  be originated in the government, political groups, consumers, profes-
  sional associations, etc. All of these forms of control are beyond
  the decision capabilities of the organization.[*]

Figure 4 presents a schematic view of the process of mutual interven-
tion between the organization and the environment, and the way in which
the organization translates the environmental inputs into specific pro-
grams in accordance with its relevant experiences and resources. The main
points shown in that diagram are:

_____

[*] A highly publicized case of negotiated interrelationship between an
organization and its environment is actually happening in the Shipbuild-
ing industry between conglomerates and the Navy. The Navy is charged
with overregulating the shipbuilding contractors, thus producing high
damage to the industry. Some conglomerates, which have taken-over the
most important shipbuilding firms, are charged with lack of care in the
operation and quality of ship construction. The interaction is being
continued in the courts with claims providing for over $3 billion, and
negotiations are likely to continue until an acceptable agreement is
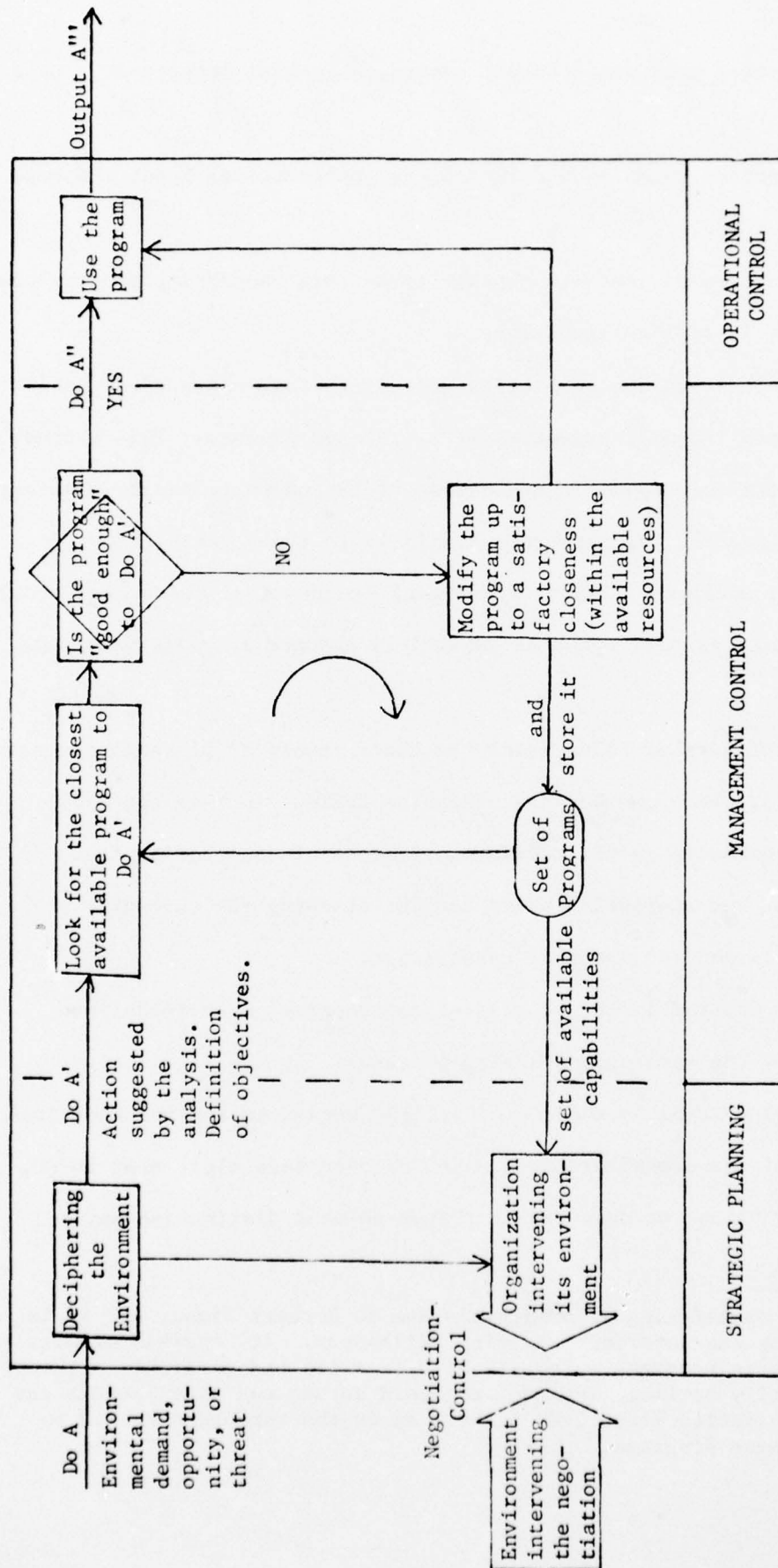reached for both parties.

FIGURE 4. SCHEMATIC VIEW OF THE PLANNING PROCESS

- The environment presents a normal demand, a special opportunity, or a threat.

- The organization tries to understand the environmental input and cope with it.

- The organization reviews its capability to react according to previous experiences in similar situations.

- The loop represents the adaptation process through which the organization assesses the attractiveness of a proposed program. This process considers the more specific objectives of the units immediately affected by the program and the resources available to those units (time, experience, managerial talent, financial and physical resources, etc.). A satisfycing criterion may be implicitly assumed in performing this evaluation.*

The diagram further illustrates the three levels of planning suggested by Anthony [5], which can be interpreted as follows in this context:

- Strategic planning is the continuous process of deciphering the environment and suggesting broad actions blending the external requirements and the internal constraints.

- Management Control is the process of implementation of guidelines produced by the strategic planning process.

- Operational control is the set of actions needed to monitor the final activity of the organization once it has been made clear what to do.

It is convenient to make explicit that no neat distinction may be

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* The idea of satisfycing is originally due to Herbert Simon, and it is recognized as one important planning philosophy. It consists primarily on establishing programs which are both feasible and desirable although not necessarily optimal, in order to avoid abrupt and sizeable changes in the organization structure, as well as on the resources needed to implement those programs.

drawn between the completion of the strategic planning process and the beginning of management control. They overlap to a certain extent in the final formulation of programs and budgets, because of the need of including the existing potentialities and constraints faced by the organization. Vancil and Lorange [42] capture this interactive process in the three cycles model they propose to describe the participation of the different hierarchical levels of the organization in the process of formulating a strategic plan.

When the strategic planning process is viewed from this perspective, it appears already tied to the current resources and potentialities of the organization. It is the relation with the environment, but framed in the existing strengths and weaknesses; it is the process of thinking-through the future, but ingrained with the present activities; it is the statement of long-range objectives compatible with short-range goals.

It is important to establish some measures to evaluate the performance attained in each step of the planning process. This effort constitutes an attempt to make a quantitative assessment of the gap between the organization and the environment.

Four different targets are suggested from the representation of the planning process depicted in Figure 4.

- Expected target: what the environment is expecting from the organization, or what the organization should do in that environment (A).
- Perceived target: what the organization wants to accomplish (A').
- Assumed target: what the organization can accomplish (A").
- Output: What the organization is accomplishing (A"').

By comparing any two of these four target levels it is possible to elucidate different dimensions of the organization-environment gap.

Figure 5 illustrates the most significant of these four comparisons. The overall effectiveness of the organization performance is defined by comparing the final output against the expected target. This represents the ability of the organization to satisfy demands from the environment, to make optimum use of opportunities, and to survive threats.

The second usual measure of the activity of an organization is determined by its program achievement that relates the assumed target with the final output. At this level, it is customary to compare the input allocated to the performance of a given task with the final output; this is referred to as the efficiency of the operation. It is important to stress that while efficiency describes how well a given task is performed, effectiveness assesses whether that is the right task to perform (Anthony [5]).

There is a third measure which results from comparing the target assumed by the organization with the perceived target. This is a measure of the known strengths and limitations to deal with the environment.

Another interesting insight may be obtained by comparing the perceived with the expected target. This is a measure of the awareness in the organization, of the ability to identify demands, opportunities, and threats. It is a measure of the strategic planning capability.

The importance of strategic planning may be appreciated clearly in this simple representation by noticing that a poor identification of the environment will impose a definite ceiling in the effectiveness of the organization; in other words, it may well be achieving 100% of the stated goals, but these goals happen to be irrelevant.
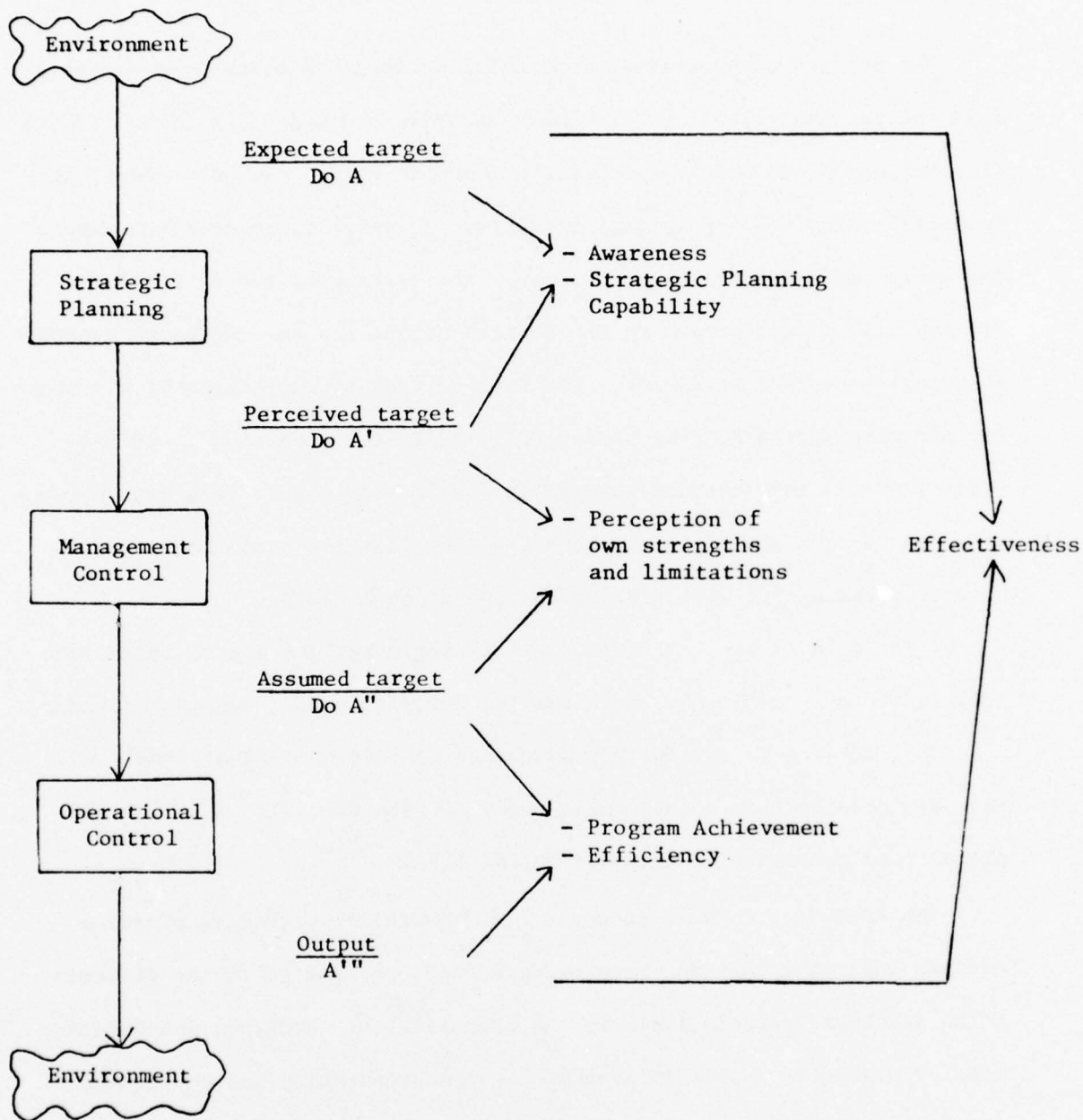
FIGURE 5: MEASURES OF THE ORGANIZATION PERFORMANCE

4.2 *Generation, Evaluation, and Selection of a Specific Strategic Option*

The process of generating meaningful strategic alternatives emerging from the gap analysis is an extremely creative and demanding task. Toward its completion the previous strategic planning stages can only contribute in establishing the appropriate conditions in which those creative inputs can emerge more naturally. Ultimately, the quality of the strategic process will always depend on the ability of the top executives to generate imaginative courses of action. Nonetheless, the formalization of a systematic planning approach, that periodically calls for attention to be provided from all the relevant managerial levels, may result in great improvements in the quality of this process, which otherwise could be neglected by more pressing but less significant operational issues.

To be able to evaluate different strategic options and to select the most attractive among them, requires the definition of a ranking procedure.

This subject is not further discussed at this conceptual level, but has been developed in a subsequent paper for the specific situation of diversified corporations (Hax and Majluf [19]).

The last step in this conceptual framework for strategic planning assumes that an option has been selected and transmitted to the different units and hierarchical levels in the organization. Programs and budgets are formulated from this information, whose preparation and subsequent control is presented in the next section.

Figure 6 presents a summary of the major steps involved in the selection of a strategic option.

This stage is centered in the interaction between the organization and the environment. Two major steps have been distinguished:

- The Gap Analysis and Formulation of a General Strategy.

    - Focused on the mutual intervention and restraint between the organization and the environment
    - Based on the existing pool of resources and capabilities existing in the organization
    - Molded by the form the environment is presenting to the organization.

- The generation, evaluation, and selection of a Specific Strategic Option.

    - Generating viable strategic options is essentially a creative process toward whose realization a formal planning procedure can create the appropriate atmosphere, and press to take the managerial team's attention away from the more pressing daily operating activities.

A conceptual approach to the gap analysis has been suggested in terms of four different targets:

 - Expected target
 - Perceived target
 - Assumed target
 - Output

Figure 5 relates some of these targets to elucidate different dimensions of the organization-environment gap.

FIGURE 6. THE SELECTION OF A STRATEGIC OPTION

5. *Stage 4: Development of Programs and Budgets: The Implementation Process*

The strategic planning exercise has produced courses of action of varying degree of specificity that the organization will try to follow in their future activities. The implementation process is oriented toward the translation of those guidelines in terms of annual operational programs, and the monitoring of their execution to assure an adequate performance.

To facilitate the exposition of the implementation process, we will

distinguish five primary phases which are schematized in Figure 7:

- The programming cycle

- Goals definition

- The budgeting process

- The control cycle

- Formal and informal information systems.

5.1 *The programming cycle*

The programming phase consists of the identification of all the necessary activities needed to be carried out in the first year of implementation of the selected strategic option, and in the consolidation of related tasks in terms of homogeneous units which are designated as "programs". Inherent in their description there is a recognition of the delegation of responsbilities associated with the execution of each program throughout the organizational hierarchy.

In the program definition it is important to recognize all the relevant characteristics of the internal environment, particularly the degree of centralization of the various organizational units and the degree of coordination among them. However, when new programs that greatly deviate from the existing ones are adopted, some structural transformation may take place in the organization.

Invariably, programs are translated into the standard budgeting system of the organization, because they have to be reflected in the apportionment of available money among the different units and the different activities.

5.2 *Goals definition*

Goals definition is needed to monitor the realization of a program. These goals have to be in consonance with the organizational objectives
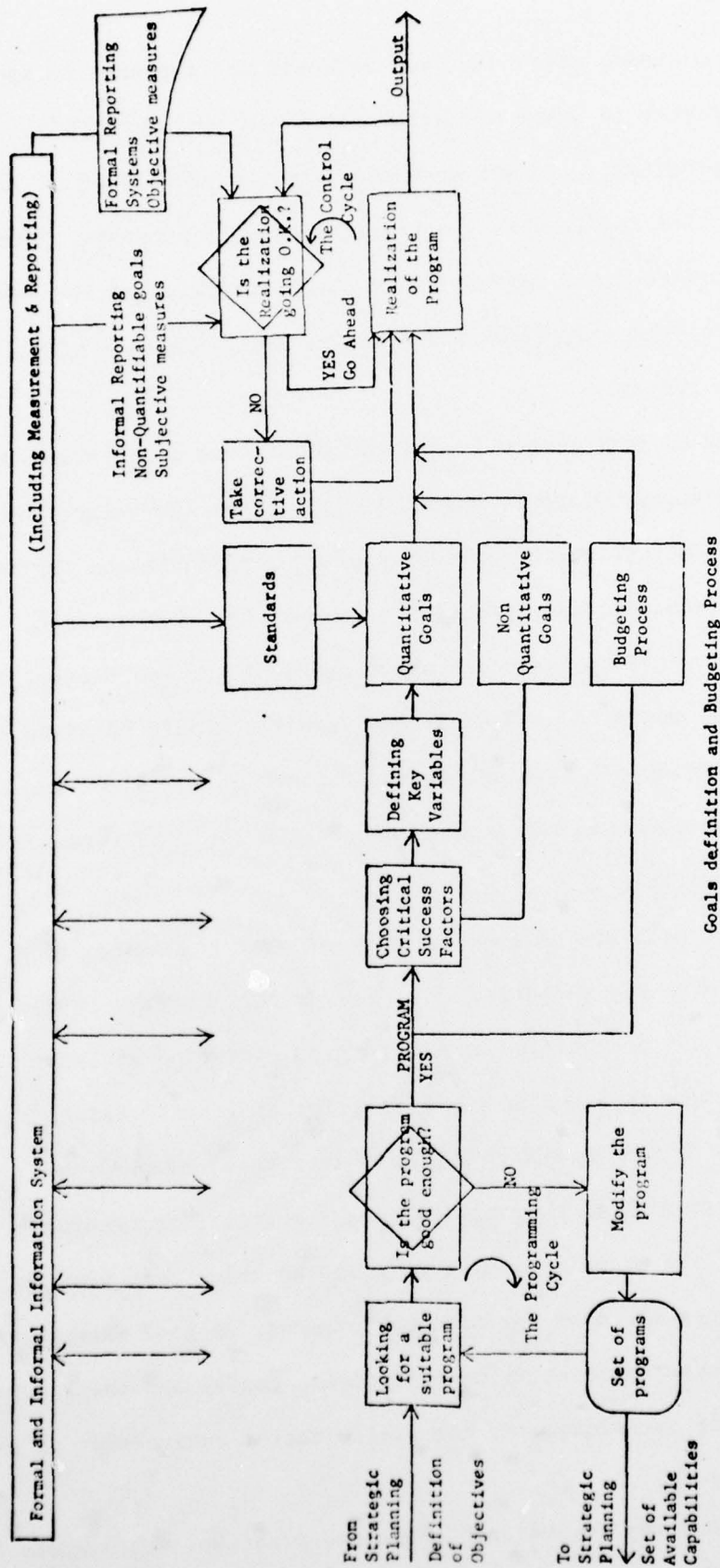
-30-

FIGURE 7. THE IMPLEMENTATION PROCESS

of each individual unit, which decrease in scope and increase in specificity as we go from higher to lower hierarchical levels (Granger [18]).

It is not practical, and not even possible, to keep track of all the myriad of activities involved in the realization of a program. Therefore, the first step toward goals definition is the abstraction of the essential characteristics of the program by means of the identification of its critical success factors.

The measures of performance associated with these factors are called key variables (Anthony, Dearden, Vancil [6]). Often the values the key variables assume during the execution of a program are not captured by the formal information and reporting system of the organization. Even worse, there might be instances where critical success factors are not (or cannot be) measured. Careful consideration should be given to the process of identifying the critical sucess factors of a project and serious efforts should be allocated to attempt to describe their performance by measureable key variables.

Quantitative goals are defined in terms of what is considered a desire-able outcome for each key variable. This determines standard levels of performance which can be modified as the program execution evolves.

Two problems are apparent in the definition of goals. First, goals are multiple in number and conflicting in nature; second, the process of translation of objectives into goals may fail to recognize the true objectives of the organization, thus goals becoming poor proxies whose attainment does not mean any true achievement. A good example to illustrate the process of identifying objectives, goals, and their corre-sponding measures of performance in the public sector environment is given by Ellis and Keeney [15].

There is no easy way to overcome these two problems. When goals are conflicting, trade-offs among them must be explicitly stated by fixing

priorities, assigning weights, or simply by relying on more subjective choices. A number of formal procedures have been developed recently to address the issue of trade-offs among multiple objectives. The most promising methodologies are multiattribute decision theory (Keeney & Raiffa [23]) and goal programming (Lee [27]).

To make the attainment of goals a more faithful measure of the realization of the true underlying objectives, many different performance indices may be used. A good example is given by all "quick-ratios" and financial indices which evaluate the performance of a firm from the point of view of return, capital structure, liquidity, growth potential, etc. (Seitz [36], Wetson and Brigham [44]). None of these indeces along is good, but the set of all of them (present and historical) coupled with a criterion for their analysis allow some understanding of the underlying financial situation.

5.3 *The budgeting process*

After goals have been specified, a budget for each program has to be developed. Traditionally, the budget simply represents the projections of incomes and expenditures for a given program (as is the case of an operational budget), or the major allocation of resources, especially financial resources (as is the case of an investment budget). More broadly defined, a budget is equivalent to a detailed one year plan.

Regardless of the degree of comprehensiveness and sophistication adopted in defining a budget, invariably it represents the basic instrument used by the organization to coordinate, implement, and communicate the programmatic decisions being made at the strategic planning and management control levels.

In discussing budgetary allocations, the basic planning issues fall

sharply into focus, and final agreements are reached in the negotiation stages that underline the conclusion of the planning process.

Besides the more conventional ways to prepare a budget (Welsch [43]), several methods have been proposed to make the budget a more responsive participatory process, and to recognize formally the programs and goals of all units in the organization. Among these methods these which have been most widely implemented are: Management by Objectives (MBO) (Olsson [31]), Planning and Programming Budgeting System (PPBS) (Hinrichs and Taylor [21]), and Zero-base budgeting (ZBB) (Phyrr [33]).

The central concepts behind these methods are:

- To define a program, preferable by the people who are in charge of
  its realization
- To define certain measureable goals that should be achieved with the
  completion of this program
- To define some benchmarks to monitor the progress along the way
- To translate all these programs into the normal annual budget of
  the organization.

The expeience with these comprehensive budgeting methods has been rather mixed. Failures invariably take place whenever these methods are *forced externally to organizations which are not prepared to change dras-tically their modus operandi.* The set of programs, rules, and decision making processes cannot be improvised anew. If a change is wanted, time has to be given for the organization to internalize that change. This is reported in one of the rare successful implementations of PPBS at the time it was imposed by the Federal Government (Lee, Chap. 6 [26]), and in Casselman's analysis [11] for the failure of a formal system in the state of Massachusetts. Also, Peterson [32] stresses this point: the impact of a new system like PPBS in the normal activities of a

university is not just the introduction of a new measurement system, but the complete transformation of the working style.

5.4 *The control cycle*

After specifying programs, goals, and budgets, the next step is to supervise the actual realization of programs to seek the attainment of the stated goals (by checking benchmark along the way) and the effective and efficient utilization of resources. If some distortion is observed, either the program has proved to be inappropriate and it should be adjusted, or some corrective action may be suggested to bring the program back to the right track.

Often the control system attempts to map the way in which the organizational units are structured within the hierarchy. Five standard types of control centers are recognized (Vancil [41]), depending on the decision options left as responsibility of the unit manager.

- Standard Cost Centers, whose objective is to minimize the variance between actual and standard cost
- Revenue Centers, whose objective is to maximize revenues subject to a budget constraint
- Discretionary Expense Centers, whose objective is to produce the best quality of service subject to a budgetary constraint
- Profit Centers, whose objective is to maximize its profit. Notice that, contrary to what happens in cost and revenue centers, in this case the manager is allowed to set prices
- Investment Centers, whose objective is the maximization of the return on investment. The manager is now accountable both for profit and assets utilization.

Financial statements and normal accounting reports are the most

common ways to accomplish these aims. Input of resources are usually measured in terms of costs. The goodness of this measure depends on many subjective criteria used to distribute indirect costs and overhead among the units employing these inputs. If these criteria are fair, a reliable measure of the resources inputed to each unit is obtained.

Outputs may well be measured in terms of revenue in profit oriented organizations. But, for non-profit organizations, the true measure of output is a problem for which there is not yet a completely valid solution. They measure their output in terms of hardly quantifiable characteristics which are not revenue. These organizations are just happy to operate in a zero-deficit situation.

Non-profit organizations have to use surrogate measures of output, which may well fail to capture the underlying process; therefore, by using many different complementary indeces, a more comprehensive determination of output is likely to be obtained. In addition to the physical amount of output generated, non-profit organizations add many other dimensions like quality, prestige, employee and consumer attitudes, etc.

Particularly taxing is the problem of short versus long term performance. Most of the existing control systems are myopic in character, centering all the managerial attention to the achievement of short term financial goals. In practice, such systems could jeopardize the healthy development of the organization in the long run.

Finally, one of the most important roles of management control is to seek congruence of goals among all the individuals in the organization hierarchy, so as to facilitate a coordinated pursuit of the overall objectives. A good control system first and foremost should provide adequate motivation for everyone. It should constitute the basis for a fair reward and penalty system which generates a driving stimulus for employees at all levels.

5.5 *Formal and informal information systems*

Information systems were already presented in the description of the internal structure of an organization, and their basic properties to filter, condense, and project information were commented upon. The last section stressed the importance of having a reliable measurement system for the information being transmitted to be pertinent.

The representation of the formal and informal information system in Figure 6 tries to show that they are indeed an integral part of the organization's internal structure, and that finally, the output is distributed via the reporting system.

The advent of computers has produced a qualitative change in the traditional information system, with the introduction of management information systems. They are becoming increasingly powerful, fast, and comprehensive.

Efforts to close the gap between man and machine languages, in conjunction with more interactive information systems, will be influencing in a decisive way the overall management of the organization, especially the ability to program and control the on-going activities of an organization. This is precisely the area covered by management control.

All these ideas with regard to management control are summarized in Figure 8.

6. *Summary*

The strategic planning process has been shown as focused in the interface between the organization and the environment. It has been presented

In general, it may be said that:

- Management control is oriented toward the effective and efficient use
  of resources within the hierarchical set of objectives generated by
  the strategic planning process.
- It has two basic cycles:
    - Program definition, which is a detailed translation of the
      objectives formulated during the strategic planning process
      into well specified activities
    - The control cycle for supervising the realization of programs.

For the control to be possible, explicit goals have to be defined:

- Consideration has to be given to:
    - Critical success factors
        - measureable: key variables
        - non-measureable
    - Definition of standards
    - The detailed definition of programs required by the budgeting
      process (as in MBO, PPBS, and ZBB).
- There are some problems in the process of goals definition, because:
    - Goals are multiple
    - Goals are conflicting
    - Trade-offs ought to be specified.
- Some ways to attack the problems are by using
    - Multiattribute decision theory
    - Goals programming
    - or having many different performance indices for each objective.

The control cycle:

- Usually maps the organization hierarchy in five alternative ways;
  by considering:
    - Standard cost centers
    - Revenue centers
    - Discretionary Expense Centers
    - Profit centers
    - Investment centers.
- Is made possible by the information system, which provides:
    - Financial statements and normal accounting reports
    - Input measures (usually in terms of costs)
    - Output measures (revenue in profit organizations, hard to measure
      in non-profit institutions)
    - Formal reporting.
- The Control System constitutes the basis for a reward and penalty system.

Management information systems are greatly facilitating the process of
management control.

FIGURE 8.   THE DEFINITION OF PROGRAMS AND BUDGETS: THE IMPLEMENTATION
            PROCESS

as an essential activity needed to understand the environment, and establish an interactive relationship with it in a direction which might reinforce the purposes of the organization.

A conceptual model to develop strategic planning has been discussed, in which the primary steps are the analysis of the organization strenghts and weaknesses with regard to the environment opportunities and threats.

This analysis is followed by the formulation of a general strategy first and more specific strategic options afterward. A process of evaluation and final selection of one of these options will lead to the definition of the programs and budgets which capture the agreement on the strategy chosen.

In very broad terms, it may be said that:

- The main components of the internal structure in the organization are its objectives, hierarchy, programs (rules), and information systems.

- The environment is characterized by two forms of change: evolutionary (which is predictable), and unsystematic (which is unpredictable); and by the speed of change. Also, the underlying structure of this environment is presented as competitive, regulated, or social.

- To preserve its future viability, the organization has to adjust to the different forms being adopted by its environment and to react trying to control it.

- Strategic planning is a necessary activity to continually track the environment and to try to maintain a viable match between internal structure and external environment. It generates the guidelines which must be adopted by the organization at very different hierarchical levels.

- Programming and control interprets these guidelines in terms of specific programs, and provides a control system to monitor their realization.

With this purpose, the identification and definition of critical

success factors, key variables, and quantitative and non-quantitaitve

goals should be provided.

As all models, this is also a poor copy of the full complexity of

reality. Nonetheless, the objective of a model is not to give an exact

picture of reality, but to provide some basic framework to attack the

formidable task of understanding that reality.

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APPENDIX: *Management Characteristics by Stage of Industry Maturity*

Management Activity or Function	Embryonic Industry	Growth Industry	Mature Industry	Aging Industry
Managerial Role	Entrepreneur	Sophisticated market manager	Critical administrator	"Opportunistic milker"
Planning Time Frame	Long enough to draw tentative life cycle (10)	Long-range investment payout (7)	Intermediate (3)	Short-range (1)
Planning Content	By product/customer	By product and program	By product/market/function	By plant
Planning Style	Flexible	Less flexible	Fixed	Fixed
Organization Structure	Free-form or task force	Semi-permanent task force, product or market division	Business division plus task force for renewal	Pared-down division
Managerial Compensation	High variable/low fixed, fluctuating with performance	Balanced variable and fixed, individual and group rewards	Low variable-high fixed group rewards	Fixed only
Policies	Few	More	Many	Many
Procedures	None	Few	Many	Many
Communication System	Informal/tailor-made	Formal/tailor-made	Formal/uniform	Little or none, by direction
Managerial Style	Participation	Leadership	Guidance/loyalty	Loyalty
Content of Reporting System	Qualitative, marketing, unwritten	Qualitative and quantitative, early warning system, all functions	Quantitative, written, production oriented	Numerical, oriented to written balance sheet
Measures Used	Few fixed	Multiple/adjustable	Multiple/adjustable	Few/fixed
Frequency of Measuring	Often	Relatively often	Traditionally periodic	Less often
Detail of Measurement	Less	More	Great	Less
Corporate Departmental Emphasis	Market research; new product development	Operations research; organization development	Value analysis Data processing Taxes and insurance	Purchasing

EMBRYONIC	GROWTH	MATURE	AGING

LIFE CYCLE CURVE

TIME